

## INTERNATIONAL SEARCH REPORT

International application No.

PCT/JP2004/017622

A. CLASSIFICATION OF SUBJECT MATTER  
Int.Cl<sup>7</sup> H01L21/3065

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)  
Int.Cl<sup>7</sup> H01L21/3065, H01L21/76, H05H1/46

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched  
Jitsuyo Shinan Koho 1922-1996 Toroku Jitsuyo Shinan Koho 1994-2005  
Kokai Jitsuyo Shinan Koho 1971-2005 Jitsuyo Shinan Toroku Koho 1996-2005

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	JP 2001-244325 A (Denso Corp.), 07 September, 2001 (07.09.01), Par. Nos. [0019] to [0030]; Fig. 1 & US 2001/0023960 A1	1-3, 19
X	JP 2003-533869 A (Applied Materials, Inc.), 11 November, 2003 (11.11.03), Par. Nos. [0004] to [0052] & WO 2001/061750 A1	1, 2
X Y	JP 2002-542623 A (Lam Research Corp.), 10 December, 2002 (10.12.02), Par. Nos. [0010] to [0033] & WO 2000/063960 A1 & US 2001/001743 A1	1-8, 18, 19 9, 10, 13, 14

☒ Further documents are listed in the continuation of Box C. ☐ See patent family annex.

* Special categories of cited documents:	"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"A" document defining the general state of the art which is not considered to be of particular relevance	"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"E" earlier application or patent but published on or after the international filing date	"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	"&" document member of the same patent family
"O" document referring to an oral disclosure, use, exhibition or other means	
"P" document published prior to the international filing date but later than the priority date claimed	

Date of the actual completion of the international search  
31 January, 2005 (31.01.05)

Date of mailing of the international search report  
15 February, 2005 (15.02.05)

Name and mailing address of the ISA/  
Japanese Patent Office

Authorized officer

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C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	JP 06-349784 A (Robert Bosch GmbH.), 22 December, 1994 (22.12.94), Par. Nos. [0006] to [0020] & US 5498312 A & DE 4317623 A1 & FR 2705694 A1	1, 11, 12, 19
X	JP 2001-284283 A (Hitachi, Ltd.), 12 October, 2001 (12.10.01), Par. No. [0098] & US 2001/028093 A1	1, 15-17
Y	JP 2003-303812 A (Matsushita Electric Industrial Co., Ltd.), 24 October, 2003 (24.10.03), Par. No. [0094]; Fig. 1 (Family: none)	9, 10, 13
Y	JP 2000-299310 A (Denso Corp.), 24 October, 2000 (24.10.00), Par. Nos. [0009] to [0079] & DE 010005804 A1 & US 006277756 B1	14
Y	WO 2003-030239 A (Sumitomo Precision Products Co., Ltd.), 10 April, 2003 (10.04.03), Page 6, line 18 to page 14, line 27 (Family: none)	14

Form PCT/ISA 210 (Continuation of Form PCT/ISA 210) (January 2003)

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Box No. II

Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:  
because they relate to subject matter not required to be searched by this Authority, namely:
2. ☐ Claims Nos.:  
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:
3. ☐ Claims Nos.:  
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box No. III

Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

The inventions of claims 1-19 are linked only by the technical feature "a method for plasma-etching an object of Si in a processing chamber wherein an etching gas containing a fluorine compound gas and a rare gas is introduced into the processing chamber, and the etching gas is changed into a plasma to etch the object". However, this technical feature cannot be a special technical feature since it is disclosed in prior art documents JP 2001-244325 A (Denso Corp.) and JP 2003-533869 A (Applied Materials, Inc.). Therefore, there is no special technical feature so linking the group of inventions of claims 1-19 as to form a single general inventive concept.

(Continued to extra sheet.)

1. ☒ As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☒ No protest accompanied the payment of additional search fees.

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Continuation of Box No.III of continuation of first sheet (2)

Consequently, this international application contains eight inventions: the invention of claims 1-6, 19; the invention of claims 7, 8; the invention of claims 9, 10; the invention of claims 11, 12; the invention of claim 13; the invention of claim 14; the invention of claims 15, 16, 17; and the invention of claim 18.

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